

the Periclean temple it is greater by one half. The effect of the curvature in the case of the temple of Theseus may have shown that an increase of curvature would be attended with advantage."

There is little doubt that some of the curves have resulted from accident; but that the curvature of horizontal lines was, nevertheless, a practice, seems established beyond a doubt. In some cases it was omitted. The temple at Bassæ, for example, although a work of the very best period, gives no indication of original curvature. Mr. Penrose explains this on the supposition that on account of its comparatively unfrequented situation it was not thought worth while to incur the additional expense necessarily attending it.

As to the reason for these deviations, our author thinks it difficult to imagine any other than that they were intended to correct certain influences which tended to make the apparent differ from the real form; and he is disposed to think that the want of each correction was felt and the correction applied separately. His opinion is that "the origin of the horizontal curve was to obviate a disagreeable effect produced by the contrast of the horizontal with the inclined lines of a flat pediment, causing the former (that is the cornice) to appear deflected from the angles." If we remember rightly, Dr. Emil Braun suggested that it was to make the lines harmonize with the sea horizon.

Our author concludes his work with some eloquent observations on the beauty of Grecian architecture, which he considers,—remembering "the studied harmony of the proportions, the delicacy of feeling evinced in the optical corrections, and the exquisite taste shown in the selection of the mouldings, and in the coloured ornaments so far as they are preserved to us; and, above all, the unrivalled sculpture, to which the architecture of the temple served as a glorious framework,"—is, humanly speaking, perfect. A greater range has been attempted in other styles, and successfully, but for consummate delicacy and judgment, the Greeks have had no equals. The study of their works is incumbent on all who would render themselves worthy the title of ARCHITECT.

Mr. Penrose's book is the result of most elaborate and careful investigations, guided by intelligence and sound scientific knowledge: it will find a place in every architectural library, and must be referred to by all who would thoroughly understand the principles of Grecian art.

ROYAL ACADEMY LECTURES ON ARCHITECTURE.

In Mr. Cockerell's third lecture, he proceeded, from the alphabet of the art, to consider its syntax, as laid down by Vitruvius, under the following heads:—1. Order, method, and regularity; 2. Fitness of arrangement, general disposition and contrivance, as adapted to locality and other circumstances; 3. Uniformity; 4. Proportion, being that relation of parts or quantities, by which harmony and grace are obtained; 5. Character, which dictates the special aspect of the work, according to its purpose; 6. Analogy, consisting in those resemblances and ideal significances which assimilate the works of man to those of nature; and, 7. Economy, not only the vulgar economy of the purse, but that which combines utility with beauty, admitting nothing superfluous, and allowing nothing to be overlooked.

The first of these fundamental rules of architecture as a fine art, namely, order, is conspicu-

ous in the individual productions of nature, from the daisy to the mammoth. It might be obscured by accidents of position, as in the case of a mob of people or a herd of wild horses; but if these were arranged in symmetrical form, as that of a regiment of soldiers, a general effect of order was produced, equally as in the individual. The principle of order, that serene tranquillity which ought to be the end and aim of all fine art, was especially enforced by Aristotle in its application to architecture. In the remains of Greek art it was conspicuous; whereas Michelangelo and his followers had sinned greatly against it in their picturesque style, which was in fact an unauthorized modern invention, arising out of the influence of the painter architects. The front of St. Peter's was particularly deficient in this respect. It would be seen by an elevation of it, that there were no two intercolumniations of equal width; besides which coupled columns were introduced, and the whole front cut up in a way which deprived it of all order and repose, and produced an unpleasant effect. In the design by Fontana for the same façade, the principle of order had been, on the contrary, well preserved. In the architecture of the Revival, broken pediments and architraves were constantly introduced: one pediment was placed within another; and many similar irregularities were committed,—the architects of that period forgetting that nature presented variety enough, and that architectural objects should be distinguished from those of nature by their greater exactness and regularity. It was right, however, to exempt the works of Raffaele from this censure. As an architect, his designs were conformable to the spirit of the antique in their regard to order. Although a thorough master of the picturesque, he had reserved that quality for his pictures, and observed a rigorous order in his buildings. Palladio also merited the same degree of praise.

One method of attaining order, which had been successfully practised, was by an equidistant arrangement of windows and doors. This might be seen in Whitehall Chapel, where the main architectural features were irregular, but the windows equidistant. The same peculiarity might be noticed in the barracks in the Birdcage-walk.

Absolute order might be seen in a continuous balustrade, and within certain limits its effect was good; but sometimes absolute uniformity produced a mechanical effect, highly displeasing to the eye. To avoid this result, the Egyptians and the Gothic architects—while their columns and intercolumniations, were alike in general form and arrangement—varied the decoration of their capitals and bases to a very great extent. The same expedient was resorted to in the temple of Ephesus; and in one of the temples of Rome the capitals of the different columns contained a rebus of the names of the artists who executed them. Sir John Soane, in the National Debt Redemption Office, in the Old Jewry, had carried out the same principle, by using arches alternately of different sizes and elevations; and it was also shown in the works of a distinguished modern architect at Ghent. Julio Romano and his followers produced an admirable effect of order by the employment of decorated panels. There was, indeed, some justice in the reproach which had applied to English architects, who, in reproducing the temple of Jupiter Stator, and the other classic orders, and applying them to the most ordinary purposes, where an ornamented wall would be much more appropriate, had too often shown much poverty of invention. The exquisite mural paintings of Pompeii would furnish many useful lessons on this subject.

On the second head of Vitruvius—*diutheia*, or fitness of arrangement,—the architect's talent resembles that of the military general, who disposes his forces so as to conquer every difficulty. As surveyor to St. Paul's Cathedral the lecturer had frequently observed with admiration the skill of its distinguished architect in this respect: one instance especially he might refer to: the south-west windows of the edifice were hermetically sealed, while those to the north-east were ready to open, to

admit the dry wind which would give durability to the structure.

In speaking of *symmetria* and *eurythmia*, the lecturer alluded to the confusion in their definition by Vitruvius, whose work was in that respect unsatisfactory,—probably owing to his deficiency of scholarship. The former of these terms might be defined as commensuration and parity of parts; a quality conspicuously displayed in the human figure. This symmetry was a characteristic and pleasing feature of the Great Exhibition building. Vitruvius spoke of decimal and duodecimal proportions among the ancients: a Roman temple had a dome in the form of a decagon; and it was possible that some such principles were acted upon. *Eurythmia* was that happy proportion and just harmony which produced an effect analogous to that of rhythm in poetry.

Under the fifth head, *character*, Vitruvius proceeded to define three varieties—the strong and robust, the slender and delicate, and that which formed a medium between the two; pointing out, in connection with the subject, the analogy of the Doric, Ionic, and Corinthian orders respectively, to the virile warmth of the mature man, the beauty of the matron, and that of the youthful damsel. It was evident, by the opening of the 3rd book of the Iliad, that the Greeks felt the dignity, beauty, and grace of these types of the human form; and set a high value upon each. The same classification of forms might be extended to the animal and vegetable creation, and even to geometrical forms; as in the cube, the parallelogram, and the cone; which each presented different qualities and merits.

The Greeks observed these different proportions, and although the theories of Palladio and his contemporaries did not advert to them, their practice did. Palladio, indeed, gave three different proportions of arches; one of a low or quadrate form, another of medium proportion, and a third being tall and lofty.

To show that all the dignity desirable could be obtained in a low, square composition, by a proper arrangement of its parts, the lecturer referred to Nottingham Castle, the house of the Duke of Newcastle, now in ruins. The width of the doors and windows in this building, and their distance from each other, served to compensate for the want of altitude, and imparted a high degree of dignity and magnificence to the design. The Church of St. Paul, Covent-garden, with its large intercolumniations, and square and massive effect throughout, was another illustration of this rule. It was also happily illustrated in the Cour de Garde of the Prussians, at Cologne, by Schinkel; whilst the vestibule of Buckingham Palace, about 100 feet by 50 feet, and only 15 feet high, was, on the contrary, injured in its effect by the employment of a Corinthian order,—which required a much loftier proportion. The equal beauty to be derived from low and lofty proportions, properly disposed, was further shown by drawings of the temple of Jupiter Capitolinus, restored by Canina, and the temple of Venus, a totally different design.

This quality of *character*, as well as the sixth quality, *economy*, and the seventh, *analogy*, were in some degree involved in the second head. The analogy of the human form with the proportions of the orders, has been already mentioned. Artists described works of art by the aid of natural similes; and in poetry the same analogy was continually felt and indicated. The slight allusion of Hamlet to the sepulchre of his father proved the analogy felt by the great poet of all time for an architectural monument; and the same analogy between poetry, nature, and arts, was displayed in the famous lines by which Viola describes her pælian grief. The artist who did not likewise feel this analogy, was totally deficient in the first ingredients of his art. Joining in the poet's anathema against "the man who hath not music in his soul," he would emphatically say, "let no such man be trusted." Let no such man be trusted with the design and conduct of works which are to assume all the graces and dignity of art, and to challenge the approbation and criticism of native and foreign connoisseurs.